

Digital over print?

A comparative study of Finnish upper secondary school English study materials in *Insights* and *On Track*

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<p> Tiivistelmä – Referat – Abstract Tutkielman tavoitteena oli selvittää painettujen ja digitaalisten oppimateriaalien eroja Otavan ja SanomaPron englannin oppikirjasarjoissa. Ylioppilaskokeiden sähköistyttyä oppimateriaalien kustantajat ovat myös julkaisseet sähköisiä versioita oppikirjoista, ja on tärkeää suorittaa vertailevaa tutkimusta niiden tarjoaman hyödyn selvittämiseksi. Aikaisempi tutkimus osoittaa, että oppikirjat ovat tärkeä työkalu opettajille. Sähköisten oppimateriaalien hyötyä ja haittoja on tutkittu aikaisemmin, mutta suomalainen tutkimus on vähäistä. Tutkielman päätutkimusmenetelmä on laadullinen sisällön analyysi. Aineistona ovat SanomaPron On Track sekä Otavan Insights sarjojen lukion kurssit 1-8 sekä niiden digitaaliset versiot ja lisämateriaalit. Aineisto valittiin sillä perusteella, että oppikirjasarjat ovat maanlaajuisesti käytössä suomalaisissa lukiossa. Analyysi keskittyy kirjasarjojen painettujen ja digitaalisten materiaalien sisältöön ja niiden vertailuun. Tulokset osoittavat, että suurimmat erot digitaalisten ja painettujen oppimateriaalien välillä ovat digitaalisten materiaalien lisätehtävät. Näissä lisätehtävissä oli sarjojen välillä eroja, mutta molemmissa sarjoissa digitaaliset lisätehtävät ovat pääosin yksin tehtäviä aukkotäydennystehtäviä, eivätkä ne tarjonneet pedagogisesti mitään uutta. </p>			
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Table of contents

1. Introduction	3
2. Background	5
2.1. Research on teaching materials.....	5
2.1.1. Learning material preferences of students and teachers.....	6
2.1.2. E-study material	7
2.2. English in the Finnish national upper secondary school core curriculum	9
2.3. Pedagogic usefulness and materials evaluation	10
3. Data and Method	13
3.1. Data: Textbook series <i>On Track</i> and <i>Insights</i>	13
3.1.1 <i>On Track</i> : 1-8	14
3.1.2 <i>Insights</i> : 1-8	17
3.2. Method of analysis	19
4. Analysis	22
4.1. Quantitative overview	23
4.2. Features of SanomaPro's <i>On Track</i> series.....	28
4.2.1. Typical exercises in <i>On Track</i>	31
4.3. Features of Otava's <i>Insights</i> series.....	36
4.3.1. Typical exercises in <i>Insights</i>	39
4.4. Usability and pedagogic usefulness	41
5. Discussion	44
6. Conclusion	48
References	50

1. Introduction

In Finnish upper secondary schools, matriculation exams have become completely electronic and as a result, students are required to have a laptop computer for their studies. There are two large publishing houses in Finland, Otava and SanomaPro, whose English textbook series are widely in use all over Finland. After the decision to make the matriculation exams electronic, the two publishers made digital versions of their different series. As the digital books and their supplemental materials are cheaper than the printed books, many students have opted, or in some cases are even required, to get the digital book. The new electronic medium could make new and innovative exercise types and teaching and learning methods possible, and this is why it is important to study these new materials in comparison to the printed textbooks: we need to see what these digital textbooks offer students that their printed counterparts do not. Digital teaching materials are also visible in Finnish news media. Especially the challenges of the new digital systems are often discussed in news publications. The Finnish public service media company Yle even has a guide for upper secondary school students in case they experience technical difficulties during their matriculation exams.

Ever since computers were first introduced to Finnish schools, their possible uses for education purposes have been studied, but previous studies about digital teaching and learning materials have largely focused on the advantages and possible issues of digital materials (e.g. Dashtestani & Son 2014 and Löytönen, Rautanen, Ruuska, H. 2015). There have been very few studies about the differences between digital and printed textbooks. Furthermore, the textbook is an essential tool of language teaching in Finland (Luukka et al. 2008) and might have an impact on the teacher's teaching methods, thus studying the different versions of this tool might provide teachers some insight on which version or series to go with and whether to require a digital book or let the students decide for themselves.

In my thesis I will study the Finnish upper secondary school English textbook series *On track* and *Insights*. I will examine the printed textbooks as well as the online materials. All available textbooks from both series were included in the study, and they were all individually analyzed in comparison to their digital versions. Each book and its digital version has been produced according to the current national core curriculum that was first introduced in 2015 and brought into use in 2016. The aim of this study is to find out how the online materials differ from the printed materials and what kind of, if any, extra materials the digital versions offer. There are three research questions that guide my study:

1. How do digital upper secondary school English textbooks differ from their printed versions?
2. What kind of differences are there between the two series?

In chapter 2 I will present previous research on this topic, starting with textbook research and moving on to printed textbook and e-study material research in their own sections respectively. I also discuss the Finnish national core curriculum as well as pedagogic usefulness and materials evaluation. Chapter 3 presents the data of the study, i.e. the *On track* and *Insights* series, and how the analysis was carried out. The results of the analysis are presented in chapter 4. I discuss the results in chapter 5 and conclude my study in chapter 6.

2. Background

In this chapter I present previous research and theory relevant to my thesis. I begin with previous studies in textbook research and then I will talk about printed textbooks and e-study materials in their own sections. Then I present the Finnish national core curriculum for upper secondary schools and talk about the goals set in the NCC. Finally I present background information for pedagogic usefulness and materials evaluation.

2.1. Research on teaching materials

Textbooks have an important role in teaching English on all levels of education in Finland. In light of today's technological advances, textbooks can be more than just traditional printed books. Pitkänen-Huhta (2003:41) characterizes modern textbooks as instructional manuals. Textbooks may have a lot of supplemental materials which include games, audio and exercises. In a study conducted by Huhta et al. (2008) 98% of foreign language teachers who took part in the study reported that textbooks are their most important teaching material. Luukka et al. (2008:94) showed that even though Finnish foreign language teachers use supplemental materials in their teaching, they rely heavily on textbooks.

In Finland, the textbooks used by foreign language teachers are very often also made in Finland. There are two large publishing companies who make language textbooks, SanomaPro and Otava. In this thesis I will examine both publishers' upper secondary school English language textbooks and their supplemental electronic material. General guidelines for what themes and grammar topics each course's and grade's textbooks should include are given in the national core curriculum, but the textbook authors have many liberties to interpret these guidelines in a way that they see fit. What the authors put in their products is up to their preferences on what is important. In a way, textbooks' contents can decide what is relevant for the learners to know and what is not (Huhta et al. 2008: 206).

Lähdesmäki (2004, p. 548) argues that the fact that textbooks are considered to guide teaching in Finnish classrooms can be considered a weakness of textbook analysis. Lähdesmäki also thinks that researchers should look at how the textbooks are used in language classrooms, instead of only looking at their contents. Harwood (2004, p. 2) supports this, as he claims that

textbooks should be studied at three different levels: content, consumption and production. Regardless, this study will only focus on the contents of the two textbook series. After all, many teachers do rely heavily on textbooks in their teaching, as was shown in Luukka et al. (2008), and the students only see the content so knowing why it is the way it is, does not generally make a difference (Holopainen, 2018, p. 17).

Textbook and learning material research in Finland is often done by university students in MA theses. Therefore, the research presented here is mostly MA theses. In Finland, studies of learning materials have focused on a variety of topics. There have been studies on representation of culture, minorities and gender, and what kind of values and attitudes are present in the learning materials. Different task types in teaching materials have been studied as well. For example, Kujanpää (2015) looked at gender representation and equality in EFL textbooks and Holopainen (2018) studied gender representation in the *On Track* series. Other studies have focused on the opinions of students and teachers on textbook contents. Ahola-Houtsonen (2013) studied the views of teachers and students on teaching oral skills. The effect of learning materials on the learning process was studied in Juntura (2012), as he looked at three 8th grade textbook series and how they promote learner autonomy.

2.1.1. Learning material preferences of students and teachers

Woody et al. (2010) studied university students' preferences on learning materials, comparing printed and electronic textbooks. They found that despite being familiar with the electronic medium, students still prefer printed textbooks. Even though e-materials make it possible to quickly access supplemental materials through hyperlinks and other features, students were still more likely to use special features in printed books than in e-materials. Millar and Schrier (2015) had similar results in their study where they studied why university students prefer one media format over another. Millar and Schrier found that students find printed textbooks to be more convenient than electronic books.

The preferences of teachers have been studied as well. Andreas Ødegård (2017) conducted a qualitative research on Norwegian upper secondary school teachers' opinions on digital textbooks. The teachers in Ødegård's study hoped that e-materials would provide more variety, and rather than duplicating printed books, they would add something new. Bando et

al. (2017) studied 4563 3rd grade and 5037 6th grade students from 271 different schools in Honduras to see how replacing students' textbooks with computers affects students' learning. Half of the schools received laptops and digital content, the other half received new textbooks and other supplies, but no laptops. Bando et al. found that both groups achieved similar test scores, and that providing students with electronic materials does not cause differences in students' learning.

2.1.2. E-study material

There are many names for electronic online study materials, but the Finnish Board of Education recommends the use of the term e-study material (e-oppimateriaali in Finnish) (Opetushallitus, 2011), so that is the term used in this study as well. In Finland, research on study materials is often limited to textbooks. Internationally e-study materials have been studied more widely. The existing research has focused on e-study material usage in relation to book title, subject, and types of users in libraries; e-study material usage compared to printed book usage; and awareness of e-study materials, how they are used, why they are used, and perceptions of them by academics, librarians, and end-users (Nicholas, Rowlands & Jamali, 2010; Rowlands, Nicholas, Jamali & Huntington, 2007).

Davy (2007) found that e-textbooks have several good qualities over their traditional printed copy counterparts: they are ubiquitous items, interactive, provide multimedia, enable printing on demand, thus saving paper, and could cater to individual learning styles. Woody et al. (2010) found e-textbooks to offer greater flexibility and accessibility than printed copies, and e-textbooks were visually more appealing. This is also visible in the guidelines for e-study materials given by the Board of Education in Finland. In the guidelines it is said that supplemental e-study materials may help students improve their learning skills for example by guiding the students in evaluating their own proficiency or by teaching them to plan their work. It is also said that the e-study materials should have a student or a student group in an active role, and that simple check the correct box type of exercises are not enough (Opetushallitus, 2012). This study aims to analyse whether the e-study materials in the two examined series adhere to these guidelines.

In 2014 Antti Ekonoja did a dissertation on the experimental use of e-study materials in schools. The research was done in seven schools around Finland with eight different teachers. 142 students who had previously taken courses about information and communications technology where they used printed textbooks. According to the study most of the students thought that e-study materials support independent studying and roughly half of the students were motivated by the use of e-study materials. The teachers who took part in the study felt that teachers who do not have much experience with using e-study materials benefited most from the ready-made materials. The students also felt that e-study materials were much more helpful in studying information and communications technology than printed textbooks. In the study, all of the teachers thought that the e-study materials were as good or better than printed textbooks. The findings in Ekonoja's dissertation seem to coincide with those of Davy's 2007 study.

Ross and Grinder (2002) studied why electronic visualization software for education purposes is underused in the field of education. They pointed out some arguably obvious flaws of electronic materials: e-study materials may be dependent on a single operating system (for example, windows or IOS exclusive software) or platform that requires installation on the users' device. If the materials are online, they likely need maintenance in case of bugs or server issues, e-study materials demand a time investment from the teacher, and lastly the materials may not be integrated properly to the course environment. The problem with platform dependency and installation can be overcome by using services that do not require installation. The last part is often a non-issue, as the e-study materials are provided by the publisher of the course book, unless the teacher chooses to use some other material. There is no way, however, to circumvent the issue of server crashes or bugs that can affect any online e-study materials.

In addition to studying publishers' e-study materials, the use of computers and other technology in language learning contexts has been studied as well. Computer assisted language learning (CALL) and technology enhanced language learning (TELL) research has shown that technology is becoming an increasingly integrated part of teaching and learning new languages but the focus of different CALL and TELL methods is on written language skills (Stickler & Shi 2016). Chun, Kern and Smith (2016) argue that the purposeful use of communications technology in language teaching can make the learners more aware of their own and others' communicative habits.

New technology is constantly being modified to suit teaching and learning purposes. Connolly, Stansfield and Hailey (2011) created an alternate reality game (ARG) that combines multiple media and gaming elements for language education purposes as a part of a European Commission Comenius project. They found that their ARG could be useful in motivating students to engage in various language learning activities thanks to the stimulating and collaborative learning environment not traditionally found in language classrooms. Connolly, Stansfield and Hailey also point out that in order to further develop technologies for teaching and learning languages, we must look further than what is already there in a traditional classroom. However, teachers have reported that even though they would be willing to try CALL and TELL methods in their own teaching the lack of resources, hardware and suitable programs hinders their ability to do so (Al-Awidi & Ismail 2011).

2.2. English in the Finnish national upper secondary school core curriculum

The Finnish national core curriculum is produced by the Board of Education and it includes separate guidelines for teaching for grades 1-3, 4-6, 7-9 and upper secondary school. I will focus on the part for upper secondary school. This thesis will look at the current core curriculum (2015) that was put into practice in the fall of 2016, and the textbook series examined in this thesis were also made with those specific core curriculum guidelines in mind.

Foreign language education has its own general goals for all languages, and each language has its own more specific goals and guidelines. These goals depend on whether the language is taught as A1, A2, B1 or B2 language. In Finland, the vast majority of students study English as a foreign language at the A1-level, so I will exclude the other levels from my study. For upper secondary school, in addition to the general goals and guidelines for English as an A1-language, there are course specific goals and guidelines. The general goals for upper secondary school English education are as follows:

The specific goal for A-level English education is that the student

- develops as a user of English and an actor in the culturally diverse world in local, national, European, and global communities.

- understands the significance and role of English as the language of international communication.
- is able to assess the sufficiency of his or her own proficiency from the point of view of further studies.
- is able to plan his or her language studies for his or her future needs from the perspective of working life and internationalization.
- gets experiences of reading, interpreting and discussing more extensive texts in English.
- is able to relate their his or her competence with the B2.1 level of the Evolving Language Proficiency Scale, assess the development of his or her knowledge and skills, and further develop these.

(Finnish national board of education, 2015, p.143)

I have included these goals given in the core curriculum in this thesis to be able to better answer the question of what extra the supplemental e-study material provide; to see if the students can reach these goals better with the e-study materials. Woody et al. (2010) and Ekonoja (2014) show that e-study materials may in fact help students reach their goals as the digital materials promote independency and ICT skills.

2.3. Pedagogic usefulness and materials evaluation

Jakob Nielsen (1993, p. 24-25) provides a model for the acceptability of a system or a product. In figure 1 you can see the hierarchical order for the different requirements of acceptability. In Nielsen's model the overall acceptability of a system is divided into two larger parts: social acceptability and practical acceptability. Under practical acceptability we can find usefulness which "is the issue of whether something can be used to achieve some desired goal" (ibid.), and under usefulness utility and usability. Utility here means whether "the functionality of the system [...] can do what is needed" (ibid.) and usability on the other hand means how well the users can then use that functionality.

As shown in figure 1, in Nielsen's model usability has five different attributes that affect a systems usability. These are learnability i.e. the system or product is easy to learn how to use; efficiency i.e. once the user is acquainted with the system or product it is efficient to use;

memorability i.e. how to use the product is easy to remember; the amount of errors the user makes when using the product or system and being able to correct these errors when they do occur; and user satisfaction. Although this model is now quite old and not specifically made for educational tools, I feel it suits this thesis well as the digital textbooks are digital systems, products meant to be used as tools in education.

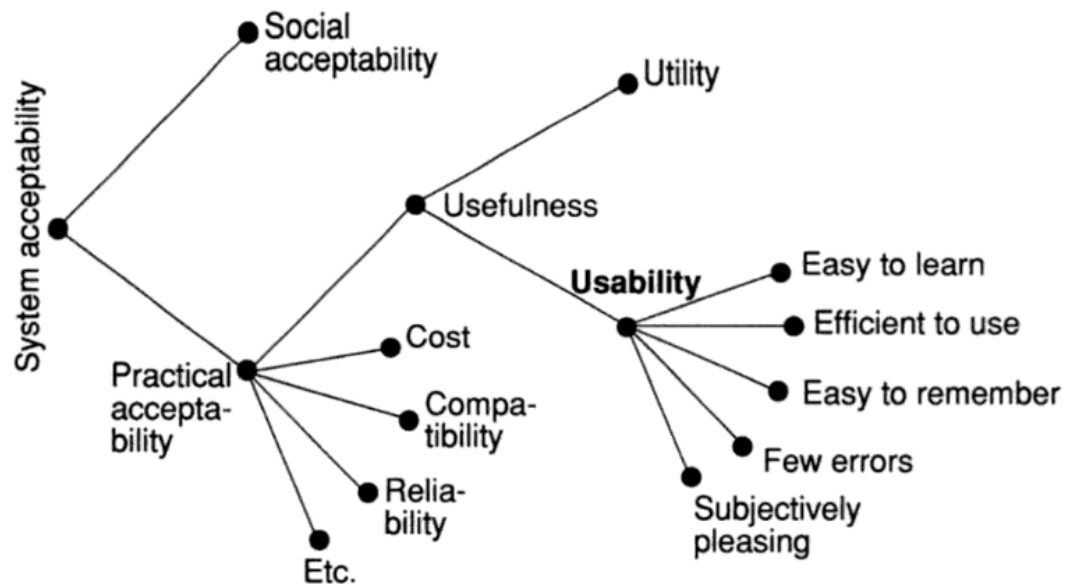


Figure 1 Nielsen's model for system acceptability

Systems designed specifically for teaching and learning purposes, like the textbooks I have analyzed in this thesis, are useful if their use promotes learning in a wanted way. For the textbooks to promote learning in a way that could be considered useful, their contents must be made according to the national core curriculum. It is also important that the materials guide the learning process in a meaningful and desired way.

Sampola (2008 p. 30) defines pedagogic usefulness as the materials' ability to support different learners' needs and guide them in various learning contexts according to set goals. Pedagogic usefulness also includes information retrieval and interactional skills as well as the support of social skills. According to Isik (2018) when new teaching materials are used, new teaching methodology is adapted by teachers and students. Choosing the teaching materials that best suit the students' need is often up to the teachers, and finding the materials that best suit the teachers' and students' needs and wants is an important task. Ellis (1997) provides two different models for evaluating materials: predictive and retrospective evaluation.

Predictive materials evaluation is done before actually using the materials. The teacher may rely on expert reviews of the materials or make their own predictive evaluations using

checklists or guidelines. Different checklists can help the teacher go through the evaluation systematically. However, Sheldon (1988, p. 245) points out that “it is clear that coursebook assessment is fundamentally a subjective, rule-of-thumb activity, and that no neat formula, grid or system will ever provide a definite yardstick”

In Ellis’ (1997) dichotomy, retrospective evaluation is done after already using the materials. Retrospective evaluation can be done impressionistically or systematically. Impressionistic evaluation means the evaluation teachers do during a course about what exercises or exercise types work and do not work for their students. Systematic retrospective evaluation could include analyzing for example students’ course journals or questionnaires to find out what types of activities and exercises the students found most suitable for them. Teachers may also choose to evaluate only certain exercises in their teaching materials rather than evaluating them as a whole. This kind of micro evaluation of exercises can be done to see how an exercise could be improved to better serve its intended purposes by finding out its weaknesses. In this thesis the focus is on systematic retrospective analysis of the two textbook series and I will not focus on micro evaluation of exercises as the aim is to find the general differences between printed and digital textbooks and the two series.

3. Data and Method

The following sections explain the research procedure of the present study. Section 3.1 describes data, i.e. Otava's and SanomaPro's textbooks and their online materials, and in section 3.2 I will outline how the data was analyzed.

3.1. Data: Textbook series *On Track* and *Insights*

In this thesis I study the two English textbook series' currently in use in Finnish upper secondary schools; SanomaPro's *On Track* and Otava's *Insights*. Both of these series are designed to teach English as a foreign language. I will study both the printed textbooks as well as the digital versions and other digital additional materials included in the digital materials in each textbook series. Both series have been produced with the current upper secondary school core curriculum, i.e. the national core curriculum for upper secondary school published in 2016, in mind. I chose these series because, at the time of writing this thesis, they are the newest English textbook series that are currently in use and both are used all over Finland.

Finnish upper secondary school students must take at least six courses of English as a part of their upper secondary school education. There are, however, more courses that are optional. Two of the aforementioned optional courses are offered in each Finnish upper secondary school, and some schools may have their own optional English courses in addition to the two. In this study I have included both publishers' course materials for each of the six mandatory English courses and the two nationally available optional English courses. I could have limited my data to only the mandatory courses but decided to include the optional courses to see whether they would provide any additional features not present in the materials for the mandatory classes.

I have limited my data to include everything the students have access to when using the materials. Even though I have access to the teachers' materials, I chose to only look at the materials available to students as my main focus. This means I have left out teachers' guides and other supplemental materials that are not intended for student use. I have not limited my

data further in fear of losing interesting results. I decided it would be best to not delimit my data to, say, only the exercises in each series.

The themes for each course are given by the Finnish national Agency for Education (formerly Finnish National Board of Education) and are also found in the core curriculum. The themes for each course are the same for both series and are as follows;

- 1 English and my world
- 2 people and their networks
- 3 cultural phenomena
- 4 society and the surrounding world
- 5 science and the future
- 6 study, work, and livelihood
- 7 sustainable way of living
- 8 speak and influence

(Finnish national board of education, 2015, p. 143-145)

In the next two sections I will briefly lay out the organization of the books in each series after which I will explain the steps of analysis of the data.

3.1.1. On Track 1-8

Each book in the *On Track* series is divided into units that are further divided into topics. Each book is designed for a specific course, so one book is used for the duration of a single course. The different topics include different texts and exercises that include listening and writing tasks as well as oral exercises related to the texts. Most of the exercises are written and can be done independently either during class time or at home. Each unit in each book has four topics with varying themes. The exception to this is the book for course eight that does not have four units of four topics but has eight longer topics instead. Figure 2 below shows the table of contents of *On Track* 1 and exemplifies how the student navigates the book. The table of contents is identical in the digital and printed versions of the book. However, navigating the digital books is somewhat different. The pages look the same in both versions but moving from one page to another is done using the digital books' toolbars. See figure 3 for an example.

COURSE 1			
Contents			
Precourse:			
English comes from everywhere	6		
Getting started	8		
Unit 1		Unit 2	
Welcome to my world		Making friends	
Topic 1: Happiness	10	Topic 5: Student exchange	52
Key text: What makes us happy?	13	Key text:	
Vocabulary	16	With a little help from my friends	55
Exercises	17	Vocabulary	58
		Exercises	59
Topic 2: Friendship	26	Topic 6: New horizons	64
Key text: Online friends		Key text: Letter from Grandma	66
versus offline friends	28	Vocabulary	69
Vocabulary	32	Exercises	70
Exercises	33		
Topic 3: Pronunciation	39	Topic 7: Pronunciation	78
/p/ and /b/, /t/ and /d/		/v/ and /w/, /ch/ and /dʒ/	
Topic 4: Read on	42	Topic 8: Read on	81
An Egyptian folktale	43	Make me happy: give me a gift	82
Vocabulary	46	Vocabulary	86
Exercises	47	Exercises	87
		Unit 3	
		We need to talk	
		Topic 9: Social life	92
		Key text: Party, party, party!	94
		Vocabulary	97
		Exercises	98
		Topic 10: Texting on the move	103
		Key text: Accidents while texting	105
		Vocabulary	108
		Exercises	109
		Topic 11: Theme vocabulary	115
		Words describing character	
		Topic 12: Read on	118
		Too much information:	
		Oversharing in the online world	119
		Vocabulary	122
		Exercises	124
		Unit 4	
		Shared lives	
		Topic 13:	
		Family (cooperative learning)	128
		Key text: We are family	130
		Vocabulary	130
		13.1 Jigsaw family Down Under	131
		Vocabulary	133
		Exercises	133
		13.2 A table for two in Japan	135
		Vocabulary	137
		Exercises	137
		13.3 Generations living together in India	139
		Vocabulary	141
		Exercises	141
		Topic 14: Role models	148
		Key text: People who change our lives	150
		Vocabulary	154
		Exercises	155
		Topic 15: Theme vocabulary	159
		Family words	
		Topic 16: Read on	162
		How well adjusted are you?	162
		Vocabulary	165
		Grammar on track	
		Word order	169
		Interrogative sentences	172
		Simple tenses	176
		Continuous tenses	190
		Future	196
		Conditionals	200
		Harmony of tenses	207
		Irregular verbs	211

Figure 2. An example of a table of contents from the *On Track* series.

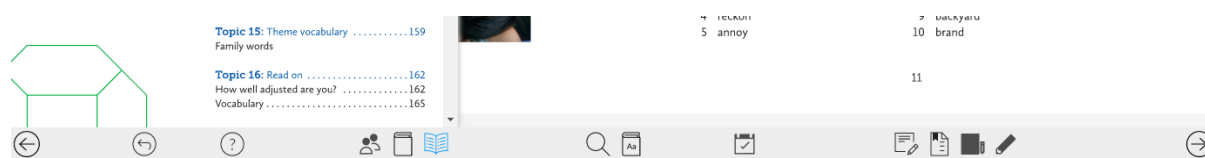


Figure 3. The navigation toolbar for the digital books in the *On Track* series.

Figure 3 shows the toolbar students use to navigate the digital books. The different buttons from left to right are previous page, previous page in history, help, sharing the book, view, table of contents, search, vocabulary, exercises, notes, bookmarks, notebook, markings, and next page. Sharing the book button allows the student to share the view from their book with their teacher. Using the markings button the student can highlight and draw on the book. The view button changes how many pages at a time the student can view from the book.

Each printed and digital book also contains a section called *Grammar on track*. In *Grammar on track* the students receive information about grammar rules on varying grammatical topics and exercises related to each topic. Each course has different grammatical topics, for example *On Track 1* teaches students about grammar rules like word order, *On Track 4* teaches modal verbs and *On Track 6* has sections for the -ing form and interrogative and demonstrative pronouns. *On Track 8* however does not have a grammar section. In *On Track 7* the fourth

unit is different from the rest of the book and from other books in the series. The fourth unit in *On Track 7* is named *final exam focus*, and the unit does not have topics like every other unit in the series, but different sections for reading and listening comprehension, grammar and vocabulary, writing and oral exercises. The *final exam focus* is supposed to help the student with the matriculation exam at the end of their upper secondary school career.

The general themes set in the national core curriculum are of course the same for both series, but the texts may have different topics. The topics in *On Track 1* include friendship, student exchange, social life and family. In *On Track 2* the texts deal with games, sports, travel and music. The topics in *On Track 3* are about cultural phenomena, and the texts are about self-expression, art, myths and legends and the future. In *On Track 4* students are presented with charity, crime and punishment, American history and media. Themes such as women in science, future of food and the human brain are discussed in *On Track 5*. The main themes in *On Track 6* are education, money and work. *On Track 7* focuses on nature and animals, sustainable living and the environment. The final book in the series, *On Track 8*, focuses on different conversational skill through various different themes already discussed in previous books in the series, such as health, travel, arts and the society.

Navigating the additional digital materials not found in the printed books happens from a list online after logging in to SanomaPro's learning environment. The options for the user are student's audio materials, how to write, alphabetic vocabulary, student's online exercises and the digital textbook. The user can choose the material they want to access by clicking on it. Clicking on an item in the list opens either another tab in the internet browser for the desired material or another more precise list in case of the online exercises. The digital books are accessed using a web browser and the user does not need to download anything on their computer for the books to work.

3.1.2. *Insights 1-8*

Unlike the *On Track* series, in Otava's *Insights* textbooks the texts are not organized under larger named units. The texts are categorized under themes which function like the units in *On Track*: there can be more than one text for each theme. There are three to six themes in each book, and the books in the *Insights* series have also been made for a specific course and one book is used during one course. In addition to the main texts under the specific themes, there are additional sections in the books: *vocabulary revision*, *learning to learn*, *grammar* and *keys*. The main texts have different kinds of exercises related to each one and the exercises are similar to those in *On Track*. There are both written and oral tasks. Many exercises in the series have the user complete sentences using either clues in the exercise or finding a corresponding phrase in a text. Oral exercises in this series are often discussion exercises related to the topic of a text. Figure 4 below is an example of a table of contents in the printed books from the *Insights* series.

PAGE	THEME	TITLE	CEFR	TYPE OF TEXT	TOPIC	SPECIAL FOCUS
6		My English, your English, our English		Quiz	English as a global language	Varieties of English and learning strategies
10	Starting over	1 Ready, steady, go!	B1.1	A extract from Stephen Kelman's novel <i>Pigeon English</i>	Experiences from earlier schools	Oral communication
18	Starting over	2 My first apartment	B1.2	A blog post	Living on your own	Housing vocabulary, reading and writing blogs
28	With familiar and new people	3 The scoop	B2.1	An extract from Jessica Morgan's and Heather Cock's novel <i>Spoiled</i>	Family	Telling about your family
36	With familiar and new people	4 Refugee boy	B2.1	An extract from Benjamin Zephaniah's novel <i>Refugee boy</i>	Moving into a foreign country	Writing an informal letter, compensation strategies
46	Workshop	5 I ♥ Finland		Activities for group work	About being a Finn	Communication strategies, project work, telling about your own country
52	Teen life: school	6 First Amendment	B2.1	An extract from Laurie Anderson's novel <i>Speak</i>	Standing up for yourself	School vocabulary, agreeing and disagreeing
62	Teen life: peer pressure	7 Nobody should have to sit alone	B2.2	A magazine article	Accepting others, bullying	Agreeing and disagreeing
70	Teen life: finding your place	8 To love and leave	B1.2	An extract from Neal Shusterman's sci-fi novel <i>Unwind</i>		Writing a response, discussing values

Figure 4. An example of a table of contents from *Insights 1*.

Navigating the digital books is quite different in the *Insights* series. Figure 5 shows the first view after opening the digital book.

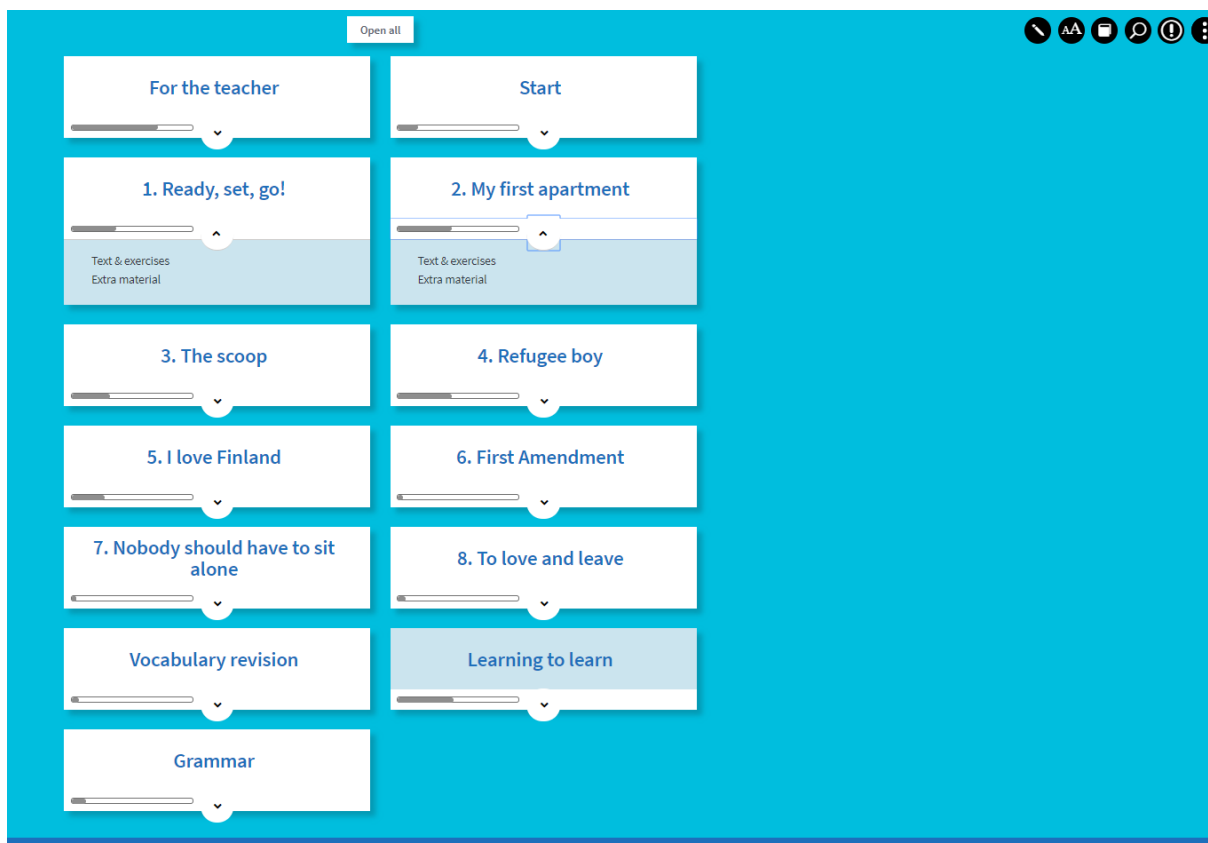


Figure 5. Navigating the *Insights* digital book. The picture is the front-page view of the digital textbook.

The student chooses which part of the book they want to access by clicking on the box. This expands the box like in boxes 1 and 2 in figure 5. There the student can further choose whether they want to access the text and exercises of the book or if they would rather do extra exercises. A navigation toolbar can be found in the top right corner. The different buttons from left to right are notebook, size of the text, vocabulary, search and help. Under the three dots the student can find a ruler, a die and a timer.

The vocabulary revision sections of the books do not have texts associated with them and the exercises are focused on the vocabulary used throughout the book. The learning to learn sections are different in each book but the idea is the same. They give the user information about different learning strategies and tell the user how to act in certain situations and how to prepare for others. For example, in the learning to learn section of *Insights 1* there is a sub-section where the authors give the user tips on how to make studying a foreign language easier. In *Insights 3* the learning to learn section includes a guide on how to give a good presentation, *Insights 6* has guidelines for making a CV and so on. The grammar section has explanations for different grammatical rules and exercises related to each grammatical topic,

similarly to *On Track*. The *keys* section is only found in the printed books and it includes the correct answers to some of the exercises in the book. It is excluded from the digital textbooks as the users can check the correct answers to exercises at any time.

The themes in *Insights 1* deal with teenage life, getting to know new people and new beginnings. *Insights 2* focuses on well-being, active life and managing everyday life. Themes such as music, drama and poetry are discussed in *Insights 3*. The main themes in *Insights 4* are right and wrong, media and making a better world. *Insights 5* takes a closer look at scientific and technological advancements. The main themes in *Insights 6* are studying, work and economics. *Insights 7* concentrates on topics like nature, wildlife and sustainability. The final book in the series, *Insights 8*, goes through some themes already discussed in previous books in the series, like in *On Track*, and brings a more communicative approach to these themes.

Even though the exercises that are present in both versions of the book are the same, the design of those exercises can vary in terms of their graphic design. Even though there are some design differences in some exercises, I will not focus on that aspect in this study as the minor design differences do not have any pedagogical impact on how well the exercises serve their purpose.

3.2. Method of analysis

Krippendorff (2013, p. 24) defines content analysis as “a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use.” Krippendorff’s definition of content analysis includes more than just the manifest content of message or text, for example the texts’ meaning relative to particular contexts and that the texts’ meaning may not be shared between all readers. According to Drisko and Maschi (2015, p. 2) manifest content means the things that are “overtly, literally, present in a communication”. Krippendorff’s definition does not specify the use of quantitative or qualitative methods. Content analysis may be a tool for evaluation and comparison of communication content (Berelson, 1952). Drisko and Maschi (2015) list different types of content analysis and I will now briefly go over these various types of analysis and finally

focus more on the most relevant type of content analysis from the point of view of the present thesis.

The first type of content analysis is basic content analysis. Basic content analyses are studies that focus on using quantitative analysis methods to analyze data. These approaches could include things such as word counts and the frequency of certain words or otherwise quantifiable materials. Basic content analysis seeks to be systematic, objective and transparent. Typically in basic content analysis the object of analysis is an existing text that was created for other purposes than the current research (Drisko & Marschi, 2015, p. 3). Interpretative content analysis focuses more on the content of a message that is not “overtly evident in a communication” (ibid.). Interpretative content analyses produce summaries and interpretations of texts rather than quantifiable data. Interpretative content analysis is also systematic and transparent but also includes the researcher’s subjective views (Ahuvia, 2001). John Gray (2010) argues that materials literature aimed at teachers tends to focus on evaluation of the materials rather than analyzing them.

Finally we have qualitative content analysis, the approach used in this thesis. Philipp Mayring (2000, p. 2) states that the object of qualitative content analysis can be “all sort of recorded communication” including interviews, discourse, video tapes, documents, and in the present study, textbooks. Guided by the research questions, qualitative content analysis seeks to develop specified categories (Drisko & Marschi, 2015) and the analysis requires the author to show how the analysis was carried out by linking their results back to the original texts. Both Mayring (2000) and Drisko & Maschi (2015) state that qualitative content analysis involves definition of categories and the application of these categories to additional data. In this thesis I have not used any existing categorization. I created my own categories that I used to make inferences on quantitative data of exercise types and number of exercises in *On Track* and *Insights*. In my categorization I have divided exercises into five categories: gap fill, translation, writing exercise, listening activity and discussion (see section 4.1.). Drisko and Maschi also point out that researchers often choose to study materials that were originally created for purposes other than research to minimize researcher bias. It is important to note that often studies that use content analysis methods are not purely one method but a mix of different approaches.

This study is in the field of textbook analysis as the data comes solely from Finnish upper secondary school English textbooks. The principal method applied in this thesis is qualitative

content analysis. Qualitative content analysis can be defined as “a research method for the subjective interpretation of the content of text data through the systematic classification process [...] identifying themes or patterns” (Hsieh & Shannon, 2005 p. 1278). Content analysis can be used for various purposes due to its flexible nature. Neuendorf (2002, p. 95) points out that content analysis is also always dependent on the researcher, as the researcher chooses what to include and what to leave out of their analysis. According to Eskola (2001) content analysis research can be classified as theory based, theory guided or material based. My research is material based as I am not using any previous categorizations or classifications for the data and I am focusing on the contents of the materials i.e. the *On track* and *Insights* series guided by my research questions.

Both publishers granted me access to their textbook series’ online materials. After I gained access, I got the printed textbooks from the university library. I then went through each book and its digital version and online materials page by page looking for differences making note of each one. After comparing the physical book to the digital version, I looked through the online materials for each course to see what kind of, if any, extra materials were included with each digital book. If there were things present in the digital version of a book and not in the print version, I went on the publisher’s webpage to see whether the missing features could be found elsewhere. This was the case, for example, with the audio materials. After I was done with each series, I compared the results with each other.

4. Analysis

I will begin this section by talking about the pricing of the products the two publishers offer. Next I will lay out the results of my analysis from each series in their own sections. I will then summarize my findings and compare the results from each series to one another. I begin this chapter with a quantitative overview where I provide quantitative data about the amount of exercises in both series' printed and digital materials. Then I will analyze each series starting with *On Track* and provide examples of typical exercises in them. Finally, I discuss the two series in terms of their pedagogic usefulness.

In their online store, SanomaPro sells printed textbooks as well as digital versions of the same books. The digital books are licensed to customers, and the students can choose to buy the book with a 6- or 48-month license. The 6-month license costs 15.30e and the 48-month license costs 24.90e. The printed book costs 32.90e. SanomaPro also sells the printed textbook with the 6-month license for the digital book for 36.16e. As we can see, the digital books are cheaper than printed books. Granted, they are also cheaper to produce as there are no printing costs, but the price can surely affect some students' and their parents' decision on which version to buy.

On Otava's online store there is an option to purchase each book in the series with a 6-month or 48-month license for 16,90€ or 27€, respectively. The printed book costs 34,10€. Otava also offers a package deal on a printed book and a 48-month license for the same book for a total of 39,10€. See table 5 in the next chapter for a comparison of the prices of the printed book, 6-month and 48-month licenses and the package deals for both series.

The 6-month license for each book seems to be a cheap version of the book only for use during the course in question. The longer 48-month license lasts four years, which is the maximum amount of time a Finnish upper secondary school education normally lasts, so this version can be purchased if the user wants to make sure they can use the same book to study for their English matriculation exam. The printed textbook also has the same advantage: it can be used as long as the textbook is in use in schools. Even though there is a difference in price to the advantage of digital books, the digital books also offer more content. SanomaPro's selling point for their digital books is that they "take studying to the next level" (SanomaPro's online store). SanomaPro's online store states that only the digital textbooks include audio and video materials, the user can check the correct answers to each exercise on their own and

the digital books include a notebook that can easily be shared with the teacher. This leads me to believe that some teachers might even choose to require their students to use specifically the digital version. Even though SanomaPro advertises that their digital books include video materials, I could not find any in the *On Track* series' online materials.

<i>Product</i>	<i>SanomaPro's On Track prices</i>	<i>Otava's Insights prices</i>
<i>Printed book</i>	32,90€	34,10€
<i>6-month license</i>	15,30€	16,90€
<i>48-month license</i>	24,90€	27,0e
<i>Package</i>	36,16€	39,10€

Table 1. Comparison of prices for the textbooks.

4.1. Quantitative overview

In this section I will provide quantitative data on the amount of exercises in each series' printed textbooks as well as their e-study materials. I will compare the amounts between each series' printed textbooks, e-study materials and then the total amount of exercises. The aim of this section is to make inferences on what kinds of exercises (i.e. complete the sentence exercises, translation exercises etc.) are common in each series and medium but the goal is not to give very specific categorizations for the exercises. I will count the instances in each book where the student is expected to do something either by themselves or in a pair or a group. Key texts, info boxes and wordlists are not counted towards the amount of exercises.

I have divided the exercises in the books into five categories: gap fill, translation, writing exercise, listening activity and discussion. In gap fill exercises students have to complete sentences with missing words. In my categorization the gap fill category also includes exercises where students have to choose a correct alternative among given options. In translation exercises students translate either Finnish or English words or sentences into English or Finnish and in writing exercises students must come up with and write a longer piece of text without a provided model. In listening activities students must do various things after or while listening to audio material, and finally in discussion exercises include all exercises that students must do orally in pairs or groups. Note that exercises can be a

combination of more than one category. I have only counted each exercise once based on what I felt is the most logical categorization. There were some exercises I found difficult to categorize, but I placed them in the category I thought was the most fitting. Some exercises could be placed in different categories if the categories would be more precise, but I feel that the amount of exercises that would be in different categories than reported here is not large enough to really affect the results, especially considering the focus of this thesis.

I have collected the quantitative data into four tables. The first two tables are for *On Track* and the second two are for *Insights*. Table 2 shows the amount of identical exercises present in both versions of the textbooks. All counted exercises can be done no matter which version of the book the student has. Table 3 shows the exercises that can only be done using the digital textbook through a web browser. Note that in table 3 I have listed the total amount and a different course specific amount. This is because in *On Track's* online extra materials the grammar exercises are the same for every book.

Table 2. The number of exercises that are available in both printed and digital On Track textbooks.

<i>Course book</i>	<i>Gap fill</i>	<i>Translation</i>	<i>Writing exercise</i>	<i>Listening activity</i>	<i>Discussion</i>	<i>Total</i>
<i>On Track 1</i>	40	47	16	28	74	205
<i>On Track 2</i>	60	40	15	18	54	187
<i>On Track 3</i>	56	33	18	27	52	186
<i>On Track 4</i>	75	30	15	35	59	214
<i>On Track 5</i>	77	38	14	23	59	211
<i>On Track 6</i>	71	32	14	21	49	187
<i>On Track 7</i>	64	32	8	24	48	176
<i>On Track 8</i>	10	0	4	23	85	122
Total	453	252	104	199	480	1488

In table 1 we can see that discussion and gap fill exercises are the most common exercise types in *On Track*. Based on the amounts of the discussion exercises a large portion of classroom time is therefore spent practicing oral English skills. Individual silent work is heavily focused on gap fill exercises, but translation and other writing exercises are still

common. There are much fewer listening activities than discussion exercises, thus it appears that students' communicational skills are practiced largely through discussing with each other.

Table 3. Number of extra online exercises for each textbook in the On Track series

<i>Course book:</i>	<i>Gap fill</i>	<i>Translation</i>	<i>Writing exercise</i>	<i>Listening activity</i>	<i>discussion</i>	<i>number of online only exercises</i>
On Track 1	39 + 77			3 + 8		127 total, 42 course specific, 85 grammar
On Track 2	46 + 77			2 + 8		133 total, 48 course specific, 85 grammar
On Track 3	32 + 77			8		117 total, 32 course specific, 85 grammar
On Track 4	36 + 77			1 + 8		122 total, 37 course specific, 85 grammar
On Track 5	45 + 77			8		130 total, 45 course specific, 85 grammar
On Track 6	49 + 77			8		134 total, 49 course specific, 85 grammar
On Track 7	37 + 77			8		123 total, 38 course specific, 85 grammar
On Track 8	38 + 77			8		121 total, 36 course specific, 85 grammar
<i>Total unique exercises</i>	399			14		413

In table 3 above I have listed all the online extra materials in the *On Track* series. I have listed the gap fill and some of the listening activities so, that the course specific and grammar exercises are sperate. I did this so the grammar exercises that are identical in for each book's online extra materials would not make the total amount of exercises appear larger than it is. For the number of total unique exercises, I counted the course specific exercises and added

the grammar exercises only once. Table 3 also shows that there are only two different exercise types in the online extra materials of *On Track*.

Table 4 shows the amount of exercises that are found in both versions of *Insights* textbooks.

Table 5 shows the extra online exercises only doable with the online textbook.

Table 4. The number of exercises that are available in both printed and digital Insights textbooks.

<i>Course book</i>	<i>Gap fill</i>	<i>Translation</i>	<i>Writing exercise</i>	<i>Listening activity</i>	<i>Discussion</i>	<i>Total</i>
<i>Insights 1</i>	34	22	14	17	84	171
<i>Insights 2</i>	80	22	13	16	40	171
<i>Insights 3</i>	60	22	11	14	45	152
<i>Insights 4</i>	70	33	17	8	55	183
<i>Insights 5</i>	67	23	19	5	32	146
<i>Insights 6</i>	58	16	17	8	38	137
<i>Insights 7</i>	58	15	18	10	26	127
<i>Insights 8</i>	2	0	4	9	126	141
<i>Total</i>	429	153	113	87	446	1228

Table 4 shows that like in *On Track*, the most common exercise types in *Insights* are discussion and gap fill. However, the relative amount of listening activities to discussion exercises is much smaller in *Insights* than in *On Track*. The fact that students' communicational skills are mainly practiced through discussion exercises is more apparent in *Insights*.

Table 5. Number of online exercises for each textbook in the *Insights* series

Course book	Gap fill	Translation	Writing exercise	Listening activity	Discussion	Total
<i>Insights 1</i>	46	4	1	19	24	94
<i>Insights 2</i>	48	6	1	14	20	89
<i>Insights 3</i>	44	3	2	13	27	89
<i>Insights 4</i>	52	12	4	9	26	103
<i>Insights 5</i>	41	6	2	8	24	81
<i>Insights 6</i>	50	10	2	6	28	96
<i>Insights 7</i>	10	0	3	9	26	48
<i>Insights 8</i>	4	1	0	9	27	41
Total unique exercises	295	42	15	87	202	641

All online extra exercises in *Insights* were unique, unlike in *On Track* where grammar exercises were the same for every book. *Insights* has 228 more online extra exercises than *On Track*. However, Tables 2 and 4 show that *On Track* has 260 more exercises that are doable with both versions. These tables are the basis for the upcoming section where I talk about typical exercises in the two series.

Based on the quantitative data presented in the tables above, we can see that the two publishers have approached the online extra materials very differently. *On Track* has more exercises that can be done with either version of a textbook but less unique online exercises. Furthermore, the online extra exercises in *On Track* are almost completely gap fill whereas the exercises in *Insights* are much more varied, although gap fill exercises are the most common type. Based on the difference in exercise types SanomaPro's online extra exercises could be for students who need more practice with vocabulary and Otava has made their extra exercises for revision of topics in each theme. The fact that SanomaPro's *On Track* has more exercises that can be done with both versions of a textbook than Otava's *Insights* leads me to believe that their main focus is on classroom education whereas Otava has focused more on enabling students' individual language learning.

4.2. Features of SanomaPro's *On Track* series

The books start with a foreword about the different exercise types in the book followed by a table of contents. In the table of contents, the book is divided into units that have been further divided into topics. Each unit has several topics, most of which are built around a key text. See figure 2 for an example of how *On Track* books are divided into units and topics. The first topics of each unit are focused either on pronunciation or theme vocabulary and the last topic of each unit is called *read on*, where the text is often an excerpt from a book or an article.

There is a section in the students' online materials called *How to write* where the students are given instructions for writing comments, compositions, dialogues, descriptions, blogs etc. This section is missing from the students' printed book. The section can also be found in the teachers' online materials, which are not analyzed in this thesis. This means that the How to write instructions must be given by the teacher when students are producing texts. The audio materials for the books' listening comprehension exercises can be listened to at any time in the students' online materials, but the textbook does not include a CD with the audio exercises. However, SanomaPro does offer an application called *Arttu*, with which students may scan pages from their printed textbooks to gain access to the audio materials linked to the exercises. SanomaPro's *Arttu* app does not always work as intended. The app suffers from issues where the app does not display anything after scanning a page and sometimes the app refuses to scan altogether.

Included in the digital materials, there is a complete alphabetical vocabulary for the book, which is missing from the printed books, in addition to the shorter unit and topic specific vocabularies included in both. However, SanomaPro has made an application for mobile devices for vocabularies for all of their language course books. The vocabulary sections in each textbook are situated after each topic's key text. These shorter vocabularies consist of words related to the topic's theme and key text, and they are not in alphabetical order. In these typically one-page long vocabularies the words are listed in order of appearance in the previous text. Each key text vocabulary also has some words that lack a Finnish translation. The words that do not have a translation are usually found in a previous exercise, where the student must find the words in a text and guess or look up their meaning in another dictionary. The exercises also encourage the use of a vocabulary application if necessary. See section 4.2.

for examples of prototypical exercises in the series. The digital book has the same type of exercises where you need to guess or look up words, but in the digital version the vocabularies do not have words that do not have translations.

There are some minor differences in navigation in the *On Track* books between the digital and print versions of the books. There is a table of contents with page numbers for each unit, topic and other section of the book in each book, but in the digital version you can simply click on any section in the table of contents and be taken to the correct page instantly. The digital version also allows the user to open the table of contents over the current page they are looking at and move to another section at any time without having to flip pages. The digital book does allow the user to open a small version of each page in the book at once and move to a page of their choosing that way too. The user can of course use the digital book just like a printed book and go forward one page at a time.

When it comes to the amount of content in each version, the digital materials have an advantage over the printed textbooks: there are extra exercises for the grammar sections and each of the book's four units. For example, the total number of extra exercises in *On track 1* is 127. 42 out of the 127 extra exercises are unit and topic specific vocabulary exercises. There is one exercise for irregular verbs, and 84 exercises for different grammar topics. The grammar exercises are divided into different topics like interrogative sentences, tenses and word order and the different topics have 1-4 exercises each. Under grammar exercises there are eight exercises for listening comprehension as well as 31 exercises for structural practice. Structural practice exercises combine different grammar topics into multiple choice complete the sentence type of exercises. The amount of topic and unit specific exercises varies from book to book, but the other exercises are repeated in each one. These online extra exercises are all individual silent work exercises, and interestingly, even though the digital medium would enable the use of exercise types not found in printed books, there are no new or innovative exercise types. None of the extra exercises have audio cues for correct or wrong answers. The only sounds in the online materials are the listening comprehension exercises' audio.

The digital version also boasts some usability improvements over the printed book. The students can easily check the correct answers to their exercises on their own, which from a teacher's point of view can easily lead to the students having the digital book just automatically fill in their homework for them. From their own computer, the teacher can

request access to their students' digital books and see what they have written to check the students' work. The digital book also allows the student to highlight and draw in the book, and the students can access an electronic notebook inside the digital book that has each pages' exercises and a box for answers. Students may make markings in their printed books and notebooks as well, but the digital books allow students to edit and remove the markings. Students can also use a built-in search function in the digital books to look for certain words, phrases or sentences. The search tool returns a phrase or sentence where the word was used along with the page number where the word can be found. These features are found in each digital book. Digital *On Track* books also allow the user to change the view of the book. The user can choose to view the book one or two pages at a time. They can also cut any part of the book and paste it into their digital notebook included in the e-study materials. It is also possible to have several copies of the same book open in the user's web browser at once to avoid having to go back and forth between pages. The user also has the option to view every page in the book simultaneously and move to a page of their choosing by clicking on the smaller view of a page.

The functionalities of the digital books allow the student to use the materials more efficiently than with a printed book. The search function makes moving through the book and finding specific words or sentences faster and the markings made with the digital marking tools, such as highlighting parts of text, are removable unlike the markings done in a printed textbook with a highlighter pen. Furthermore, the remote sharing of the students' notebook with the teacher makes checking the students' work easier for the teacher as well as the students and it can be done even if the student cannot be present in class. If the teacher wants to check answers written in printed books, the teacher must collect students' books or notebooks and manually check the answers.

In the second course's e-study materials there is an online game about the American route 66 for two to four players that is playable online. The game itself is nothing new, it is a game where the students roll a digital die, move on a gameboard and answer questions.

Interestingly, this exercise can be found both in the printed book and the online material. However, in the printed book the exercise says that the game can be found in the course online material, not in the book itself. Now then, this could mean two different things: the game is only playable if at least one person in the small group playing the game has an online version of the book, or the students who purchase the printed textbook also get access to the online extra materials included in the digital book. If this is the case, it could be argued that

printed textbooks, which are more expensive based on Sanomapro's online store, are less consumer friendly than the digital textbooks. Perhaps the point here is that those students who do not have the digital course book can use *Arttu* to access the online material, but a smartphone's utility as a platform for language exercises is debatable. In Finnish upper secondary schools, students are expected to have their own laptops with them as the matriculation examination has now turned completely digital, which arguably does make a case for digital learning materials, but if the materials are meant to be used on a laptop computer in class, maybe it would be best to design the exercises to require only the platform they are used on.



Even students who buy the printed book have access to some of the online materials of the series through mobile apps. Choosing between the printed and digital versions of the book is not black and white as the printed textbook also encourages the use of the publisher's digital materials.

4.2.1 Typical exercises in *On Track*

I will now present some prototypical exercises from *On Track* textbooks and the online extra material. I will begin with exercises from the printed books and then move on to exercises from the online materials. In each *On Track* textbook there are vocabulary exercises linked to each text, two of which appear with every single key text in the series. These exercises are *Personal dictionary* and *Phrase hunt*.

Personal dictionary

5C Read text 5. Find the words below in the text and underline them.

- First, guess the meaning of the words, then look them up in the vocabulary app if necessary.
- Choose 3–5 extra words or phrases and mark them, too. 
- Try making sentences with some of the words. 

- | | |
|-----------------|-----------------------|
| 1 funding | 6 involve |
| 2 requirements | 7 conclusion |
| 3 wardrobe | 8 ignore |
| 4 orientation | 9 suggest |
| 5 embarrassment | 10 student counsellor |

Figure 6. An example of a Personal dictionary exercise. On Track 1, topic 5, page 54.

Phrase hunt

1E Find the following expressions in the text.

- 1 tyytyväinen johonkin
- 2 ei erityisessä tärkeysjärjestyksessä
- 3 Meille olisi pitänyt opettaa
- 4 Keskittymisen sijaan
- 5 hakea jotakin
- 6 perustaa ja johtaa omaa yritystäni
- 7 ihmiset voittavat tietokoneet
- 8 rahankäytön kurssi
- 9 jätetty täysin sattuman varaan
- 10 valmistautunut tähän

Figure 7. An example of a Phrase hunt exercise. On Track 6, topic 1, page 19.

In Personal dictionary exercises the student must first try to guess – if they do not already know - the Finnish translation of words related to a key text, check their correct translations and finally come up with sentences using some of the given words or other words or phrases they found in the text (see figure 6). Phrase hunt exercises have students looking for the English translation to expressions given in Finnish. See Figure 7 for an example of a *Phrase hunt* exercise. I decided to include these two examples here even though they do not represent the most common exercise types because these exercises are found in every topic of every book, print and digital. The examples in this chapter are from various books in the series. All

the exercises in the categories I made follow the same patterns and are very similar to each other, so in theory it does not matter which books I take the examples from. I decided to take the examples from different books simply because taking them all from a single book would feel like I would only analyze a single book rather than a whole series. Figures 6 and 7 are both from printed books, but these exercises appear identically in the digital books.

As I pointed out in table 2 the most common exercises are discussion and gap fill exercises where the students must fill gaps in sentences in English by using clues given in the exercises in either English or Finnish,. The printed books' discussion exercises are usually related to the topic of the key text. For example, topic 14 in *On Track 3* is about architecture and in one of the discussion exercises for that topic students must discuss what they think buildings will look like in the future, how they feel about Finnish buildings etc. In figures 8 and 9 you can see examples of discussion and gap fill exercises.

Figure 8. An example of a discussion exercise. On Track 3, topic 14, page 146.

14E Discuss the following questions in pairs or small groups.



- What is your opinion about the planned 2050 building in Beijing?
- What do you think buildings of the future will look like?
- How do you feel about tall buildings in Finnish towns?
- Many old buildings in Finnish towns are demolished and replaced with modern constructions. What do you think about this?

Figure 9. An example of a gap fill exercise. On Track 4, topic 10, page 124.

101 Choose the correct preposition from the box below.

Note that there are two extra prepositions.

for between after on by into to (-) across at in from

Quirky passport facts

The passports of most countries are, 1 _____ the whole, very similar. There are some quirky differences 2 _____ them though. Applicants who apply 3 _____ a Pakistani passport have to attend an interview 4 _____ an embassy. The Nicaraguan passport is apparently one of the least forgeable documents 5 _____ the world. It boasts 6 _____ 89 separate security features. The old South African passport was a liability in Africa, since many African countries would not allow citizens 7 _____ the apartheid state 8 _____ their borders. The Israeli passport is not accepted 9 _____ 23 different Muslim countries, nor by Cuba or North Korea. The Vatican, incidentally, has no immigration controls, but it does issue passports 10 _____ its citizens. The Pope's passport is called "Passport No 1". Naturally.

The vast majority of exercises in the online materials for *On Track* are multiple choice gap fill exercises. Figure 10 is an example of a structural practice gap fill exercise where the student must choose the correct alternative to each gap. There are three options for each gap and the options are revealed by clicking on a drop-down list. Table 3 shows that 399 out of 413 online extra exercises are gap fill. All gap fill exercises in the series are very similar. Most online extra exercises in *On Track* look and work just like the exercise in figure 10.

Structural practice

1A Looking for the best

G

Valitse oikeat vaihtoehdot.

Looking for the best

A friend of told me that when a new school was built in her neighbourhood, local people were invited to decide on the name of . An official letter was sent to all the homes in the neighbourhood with the slogan: "A modern school for and there was a space at the bottom for a name suggestion. The idea was that suggestion would be chosen by the municipality. bad news for my friend because, not having much of an imagination, it was difficult to come up with an interesting and original name.

Tarkista

Figure 10 An example of a typical online exercise in the On Track series.

At first glance there seem to be a lot of extra exercises in each course's online materials, but upon closer inspection, there is very little variation in the extra materials between each course. Each course includes the same grammar exercises and the same eight listening comprehension exercises as well as the same 31 structural practice exercises. The only exercises that differ from one another are the unit and topic specific exercises, as they deal with vocabulary used in each of the books' key texts. There is a varying number of exercises for each unit of each book, and the number of these book and unit specific exercises is listed in each book's own subsection. The online extra exercises seem to have a question bank from which the exercises draw from randomly. When I examined the exercises between different books, I often got the exact same question but in a different order, thus the randomization of exercises is not always enough to make the exercise feel like the user has not done it before.

The digital medium of the exercises allows the random generation of questions for the exercise. This means that for exercises that have multiple parts (a, b, c and so on) the parts can be in different order every time the student attempts the exercise. Also, if the question bank has more questions than the exercise has parts, the student cannot see every question the exercise has to offer on their first attempt.

As shown in tables 2 and 3, there are no large differences between print and digital mediums in terms of which exercise types are the most and least common. In printed books discussion exercises are the most common type (see table 2) and in the digital books gap fill exercises are the most common thanks to the extra materials which are mostly gap fill.

The purpose of these examples is to show that the exercises in both versions of the books are very similar. The exercises are pedagogically identical, but they differ in how they are done. With printed books students write on a physical notebook and with a digital book the notebook is also digital. The teacher can check the students' answers without having to walk around the classroom or collecting students' notebooks. Discussion exercises in digital books do not differ from those in printed books, as the students must discuss face to face regardless which version of the book they own. Students may check the correct answers to all exercises that are found in both printed and digital versions of the book whereas those with a printed book must rely on the teacher. The fact that SanomaPro has included only individual silent work exercises in their online extra materials shows that SanomaPro's focus in these extra exercises is to support students' individual learning rather than to give teachers and students alternative things to do in class.

4.3. Features of Otava's *Insights* series

Each book of the *Insights* series begins with a *for the user* section that explains that the student may choose between the printed textbook or the digital version, and that both include the same key texts, exercises and grammar. Each printed book in the *Insights* series has a mention that the user may download a free of charge app for a smartphone that has an alphabetic vocabulary for all eight courses in the series, and that all audio materials are available for download on Otava's website. After the *for the user* section, the next two pages display the different themes and topics discussed in the books. There is a table with page numbers for each theme with additional information, Otava has also included Central European Framework of Reference's language competence levels for each theme. Under the table of contents, there is also a shorter table of contents for the vocabulary revision exercises as well as the learning to learn and grammar sections. Each theme typically revolves around a key text and the exercises are often related to the theme's text. The *learning to learn* and grammar sections are separate from the books' themes.

Both versions of the books have grammar sections with exercises related to different grammatical topics. For example, the first book of the series, *Insights 1*, has explanations and exercises for topics such as the present, past and future tense; *Insights 3* includes explanations and exercises for nouns, articles and genitives. The books also have *crack the nut* exercises which are supposed to help the user to expand their skills. Both versions of the textbook have the answers to the grammar as well as the *crack the nut* exercises. Some of the grammar exercises have a *homework* tag, and the answers to these exercises are not in either book. In addition to the key to the grammar exercises, with the digital textbook the user can check the answers to all other exercises whereas a user of the printed textbook must rely on the teacher to check the correct answers.

The digital version of the textbook includes extra materials for each theme and key text. The additional sections (for example the grammar and *learning to learn* sections) do not always have extra exercises. Many of these extra materials, unlike in SanomaPro's *On Track* series, are for in class use or to be given to students as handouts for homework rather than being for the students to do independently at home. These in class and handout materials include pronunciation and listening exercises, writing and discussion activities, role play, quizzes and games. Most of the extra materials are still gap fill grammar exercises. I have included these extra materials here because all extra materials were found in the same place in a section the students have access to. However, Otava has a publicly available support package for *Insights* books one to six that anyone can download for free from Otava's website. This support package includes exclusively grammar exercises for each grammar topic in *Insights* books. Like in SanomaPro's textbook series, *Insights'* online extra exercises have no audio cues for correct or wrong answers.

Otava has left out a complete alphabetical vocabulary from the series' printed books and included it in the digital versions. *Insights* coursebooks also have a one-page long glossary attached to each key text in each book, but there are some differences between the two series. In *Insights* glossaries, the words are in alphabetical order, whereas in *On Track* they are in order of appearance. *Insights* coursebooks have also left out the exercises where students must fill the correct translations to some of the words in the vocabulary themselves and have included all the translations instead. *Insights* books have marked the most important or relevant words for each text by writing them in bold. SanomaPro has not done marking in their *On Track* books. Both textbook series have placed the vocabularies immediately after key texts in both the printed and digital versions of the books.

Otava has included a search function to the digital *Insights* series. The search function works like SanomaPro's: you can search for a single word, a phrase or sentence and the search engine returns all the hits it found in the book. Clicking the search result takes the user to the page where the result was found. The digital books also include a notebook, a die, a timer. The die and timer are novelties compared to what is found in the printed books. The *Insights* series also includes video exercises that can be done independently at home or as an in-class exercise. The video exercises are most likely added to the teaching materials as a result of the matriculation examination board also adding video exercises to the English matriculation exams in pursue of authentic language use situations.

The functionalities of digital *Insights* books make the more efficient to use than their printed versions. Like in the *On Track* series, the search function helps the student find specific words or sentences faster than with a printed book and different markings students make on their digital books can be edited or removed completely. The student may also export their notes from the digital book as a pdf file and easily share it with the teacher or other students remotely.

Again, there are some differences between navigating the printed textbook and the digital one. The printed textbooks have a table of contents in the beginning with page numbers for each section and text. Instead of making the digital book look exactly the same as the printed version, Otava has decided to make their digital textbook look and feel more like it was designed to work with a computer, as noted on page 18. When the user opens a digital *Insights* book, they see a separate box for each key text and other section in the book. By clicking on a key text's box, the user can then choose from two options: text & exercises and extra material. Clicking on a box for another section reveals the different subsections, exercises and extra materials for that section. The digital books in the *Insights* series are accessed using a web browser and no downloaded software is required for the books to work on the users' computer.

Even though there are clear differences between printed and digital books, choosing to buy the printed book does not mean that the student does not have access to any online materials. The students can access some of the materials using the free mobile app or through the publisher's website. Thus, even the printed book is not completely void of digital parts.

4.3.1 Typical exercises in *Insights*

The most common exercise types in the *Insights* series are discussion and gap fill exercises (see tables 4 and 5). In gap fill exercises the user must connect the best alternative among the given clues to a sentence or translate a clue to either Finnish or English in order to complete phrases. The example below is taken from the online materials, but the exercise is the same in both digital and print versions. The purpose of these examples is to show that the exercises in both versions of the books are very similar. The exercises are pedagogically identical, but they differ in how they are done. With printed books students write on a physical notebook and with a digital book the notebook is also digital. The teacher can check the students' answers from their own copy of the book without collecting students' physical notebooks. Discussion exercises in digital books do not differ from those in printed books, as the students must discuss face to face regardless which version of the book they own. Students can freely check the answers to exercises that are found in both versions of the book. Figure 11 is a gap fill exercise taken from the online materials for course 1. The only difference between online and print gap fill exercises is their design, meaning there are no pedagogical differences.

7c

Fill in the missing words and phrases.

During (*viimeisellä viikolla*) of summer, I was watching some children play in a park and noticed this (*viisivuotiaan pojan*) sitting (*aivan yksinään*) at the sand box. Almost immediately this girl walked up to him and they started to play together. I suppose (*mitä nuorempi*) you are, (*sitä helpompaa*) it is to make new friends. (*Ennen oli*) so easy to start talking to other children I had never met before. When did that change? Maybe small children understand that happiness can simply be (*saavuttaa olemalla ystävällinen*) to everyone. If we all lived by that simple rule, everyone could (*tulla sinuiksi itsensä kanssa*).



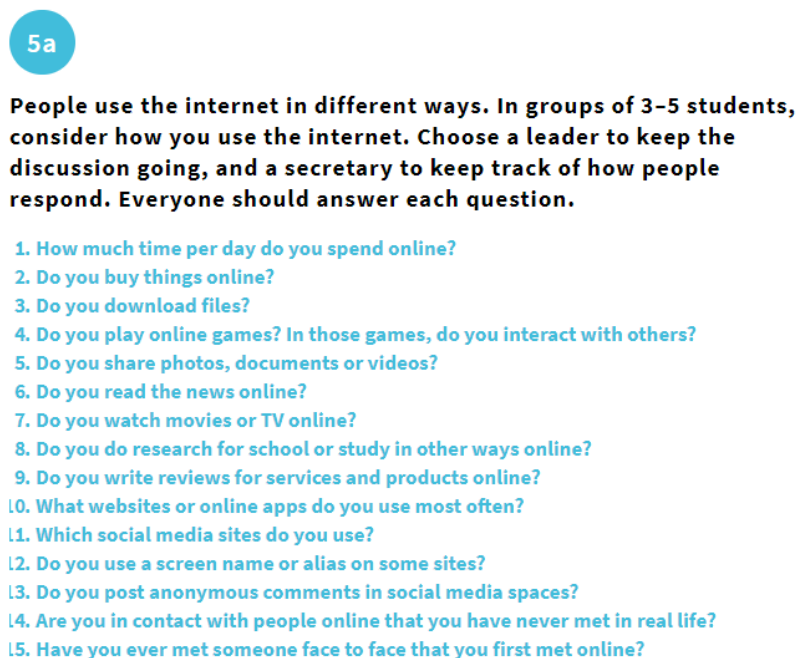
 

Figure 11 An example of a gap fill exercise in a digital *Insights* book. *Insights 1*, theme 7, page 66.

Gap fill exercises are used for vocabulary and grammar practice. Discussion exercises might have the students form small groups and retell a key text in their own words or discuss a text's topic. For example, in *Insights 2* topic 5 is about the internet. Figure 12 is a discussion exercise for this topic.



5a

People use the internet in different ways. In groups of 3–5 students, consider how you use the internet. Choose a leader to keep the discussion going, and a secretary to keep track of how people respond. Everyone should answer each question.

1. How much time per day do you spend online?
2. Do you buy things online?
3. Do you download files?
4. Do you play online games? In those games, do you interact with others?
5. Do you share photos, documents or videos?
6. Do you read the news online?
7. Do you watch movies or TV online?
8. Do you do research for school or study in other ways online?
9. Do you write reviews for services and products online?
10. What websites or online apps do you use most often?
11. Which social media sites do you use?
12. Do you use a screen name or alias on some sites?
13. Do you post anonymous comments in social media spaces?
14. Are you in contact with people online that you have never met in real life?
15. Have you ever met someone face to face that you first met online?

Figure 12 An example of a discussion exercise in the *Insights* series. *Insights 2*, theme 5, page 54.

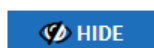
The extra material in the *Insights* series is more diverse than in *On Track*. By looking at tables 3 and 5 we can see that *Insights* includes more task types in the extra exercises. Furthermore, the materials include exercises like role play and games that are not found in *On Track*'s extra materials. Figure 13 is an example of a role play exercise. Role play exercises have the students act out one of two roles, A or B. In the exercise shown in figure 13, two students are given three prompts to include in their discussion. Student A does not see student B's side, and vice versa. I would like to point out again that the extra materials in this series also include exercises for the teacher to give as a hand-out rather than independent work done at home. However, gap fill exercises are the most common type of extra exercises in *Insights* as well.

As noted in section 4.1, there are no large differences in exercise frequency between the two mediums. Discussion exercises are the most common in the series in the printed books when

looking at the total number of exercises in table 2 and the online extra exercises are mostly gap fill due to a large number of grammar exercises.

Role play

Student A



You are a young and impulsive driver who has received too many speeding tickets lately.

You have also lost your temper quite a few times and your friend thinks you suffer from road rage and need advice and help.

Listen to your friend's advice but also defend your behaviour.

Student B



Your friend is a young and impulsive driver who has received too many speeding tickets lately.

Your friend has also lost his/her temper quite a few times and you think he/she suffers from road rage and needs advice and help.

Give advice without sounding like a bore and a nag.

Figure 13. An example of a role play exercise from the online extra materials for Insights.

Despite discussion and gap fill exercises being the most common task type in the series, the more varied exercise types separate *Insights* from *On Track*. Role play, games and other types of exercises that are not as common as gap fill for example, are still present in the online extra materials. Furthermore, some of the exercises are handouts to be printed out and used in the classroom, not at home. Otava has focused more on giving teachers and students different options for spending their classroom time while still supporting students' independent learning by giving students the opportunity to practice more at home.

4.4. Usability and pedagogic usefulness

In this section I will analyze the materials at hand according to how well they meet the presented criteria for usability and pedagogic usefulness. As these materials are made for educational purposes I believe it is important to make it explicit whether they can be considered efficient tools for their intended use. I presented Nielsen's model for system acceptability in section 2.3. In Nielsen model, usability is given five different attributes, easy to learn, efficient to use, easy to remember, few errors and subjectively pleasing. I will now go over these attributes for each series.

Both series can be considered easy to learn. The e-study materials of both series are intuitive, and the user is not left guessing how the materials work. The user does not need to familiarize themselves extensively with the materials in either series before being able to use them efficiently. The e-study materials are also efficient to use, regardless of publisher. The added functionalities in the digital books make them more efficient to use than their printed versions. The search function included in both publishers' e-study materials make finding specific words or phrases much faster than browsing the printed book. The user may also make and edit various marking on their digital books, whereas with a printed book highlights and other marks made with pens are permanent. Digital and printed books are equally easy to remember how to use in both series. The printed books are navigated like any other book and the student does not need to remember any keyboard shortcuts etc. to operate the books in their web browser.

When it comes to the errors attribute of usability, and how well the user can be expected to correct their errors, the digital textbooks differ from their printed counterparts. When doing exercises in the digital textbooks, the students can see when they make errors by checking the correct answers to the exercises on their own. This, of course, is not possible in the print versions of the textbooks and the students must rely on their teacher to give them the answers, so in this regard we could consider the digital textbooks more pedagogically useful, assuming the students do not abuse the possibility of checking the correct answers themselves. The last attribute of usability in Nielsen's model is whether the product or system is subjectively pleasing. This attribute is up to each individual user, but in my opinion each book and the e-study materials were pleasing to use.

In SanomaPro's *On Track* series' the extra materials are all individual silent work exercises. If we define pedagogic usefulness as something that can support the needs of different kinds of students and these materials are all of the same type, I do not believe that these materials could be considered pedagogically useful in that aspect as not all students benefit from this type of exercise. Furthermore, the interactional and communicational aspect of learning are not represented at all in these extra materials. Otava's *Insights* series seems to be more pedagogically useful. Previously I have shown how the online extra materials differ in the two series, and that in *On Track* the extra materials are more varied: in addition to individual silent work they include role play, games etc. This variation in exercise types takes into account the different ways of learning students may have and also supports learning as an interactional, social process while also leaving room for individual work.

Ellis (1997) gives two models for materials evaluation: predictive and retrospective evaluation. My retrospective evaluation of the materials in *On Track* and *Insights* shows that both series are equal in terms of Nielsen's model of usability, but they differ in their pedagogic usefulness. *Insights* takes various learning styles of students into account better than *On Track*. This goes to show that even though both materials are equal in terms of usability, teachers should pay attention to the books' pedagogical usefulness when deciding which series they want to use.

5. Discussion

In this chapter I will seek to answer the research questions presented at the beginning of this thesis. I will also further compare the results of the analysis of the two series.

The purpose of the first research question was to identify the differences between printed and digital textbooks, beyond the obvious difference of medium. Both publishers' digital textbooks offer features that make using the textbook more efficient than printed textbooks. Features such as the search function, digital notebook, having audio materials readily available without having to use a mobile application, and being able to check the correct answers without having to rely on the teacher are innovations that make digital textbooks better than traditional textbooks. However, I feel that the differences between the two mediums are minor compared to what could have been possible. Let us take the extra exercises as an example. Both series have a large amount of extra materials online. SanomaPro has made silent individual work exercises for students to do in their spare time while Otava's extra materials also include materials for teachers to give to their students as handouts. Almost all of SanomaPro's online materials are multiple choice gap fill exercises, except for a few exercises where the student must write what they hear. Otava's online materials, in addition to gap fill exercises, offer a lot more variation as they include games, role play, pronunciation and vocabulary exercises as well as handouts with exercises that go over the key texts of different themes in the book. These exercise types listed above are all already commonly used in schools, digital books or not. The computer environment would have made more innovative exercise types possible, but right now the capabilities of computers are not fully utilized.

The second research question is about the differences between each book and series. I will now compare the series to one another. One feature both series have in common is that in both the student can check their answers to all exercises without the teacher whenever they please, including the answers to those exercises that are found in both printed and digital versions of the books. This can be both a good and a bad thing. The good thing is that if the students are able to check their homework on their own, the teacher does not have to spend class time to check students' answers. On the other hand, if students can access the answers even before trying to answer the questions themselves, it is up to each individual student to choose whether they find it worthwhile to do exercises at home. If students use this feature a lot,

using the digital versions of these books might even affect assessment, if the teacher cannot be sure whether the students' answers are their own or not. To be fair, in Finnish upper secondary schools the education primarily aims for the matriculation examination and many teachers choose to give grades solely based on an end of course exam.

Both series also have mobile apps that have vocabularies. SanomaPro has the *Arttu* app that gives students access to audio material in the books by scanning a page of a textbook and another separate app for vocabularies called *Sanastot*. The *Arttu* app works quite poorly as the app often refuses to scan the page you want and sometimes the app will not let you even access the book you want to even begin trying to scan a page. *Arttu* is a free app, however, so the students who are using SanomaPro's books do have an option to access the audio materials even without the digital version of SanomaPro's textbooks. However, when the app works, the audio works well, even though the way of accessing these materials is clumsy. In a more consumer friendly manner, Otava has made their audio materials publicly available: all audio materials for all English courses are free to download from Otava's website, even if you do not have their textbooks at home.

In SanomaPro's series there is a complete alphabetical vocabulary included in the online materials that come with the digital books, and Otava has made a complete vocabulary available through their mobile app. I wonder what value these features give to students amidst other modern possibilities e.g. Google's translator or the Finnish alternative Sanakirja.org. I assume that many students are more familiar with online dictionaries and translating tools than that of either publishers', and thus are more likely to use those over the ones given with each book's supplemental materials. Moreover, these vocabularies, however complete they are advertised to be, are not as a matter of fact complete; they only contain the vocabulary used in each book. Why then would a student choose to use these publishers' vocabularies over other free options? One possible answer is that with the publishers' vocabularies they students do not need to second guess the quality of the translations. I can see the point of only including the vocabulary that is central to each books' themes and topics in the printed versions as printing is relatively expensive and printing a more extensive vocabulary list in the back of the book would also make the book a lot thicker. Perhaps the thought process behind including relatively short vocabularies even in the digital books is that students do not need to know other words not listed or are expected to know them well enough to not have to check them anymore.

In both series discussion exercises were the most common type of exercise when looking at the exercise totals in tables 2 and 4. This makes sense as the teachers cannot have students talk to each other as homework and discussion exercises must be done in class. When looking at the online extra exercises for both series, gap fill exercises are the most common. In *On Track* nearly all of the extra exercises are gap fill with only a few exceptions. In *Insights* however the exercise types were more varied but still the grammar exercises are mostly gap fill. The fact that both series have gap fill exercises as the most common online extra exercise seems lazy. Surely gap fill exercises are not the only or best type of exercise to teach grammar? With the online digital environment making all kinds of exercise types possible it seems absurd to stick to one type of exercise so stubbornly. This makes me wonder why all the online exercises are so simple. It might be that the publisher and the textbook authors felt that the online materials should be more aimed towards students who might have issues with English and that the exercises are only there so students can independently revise the things they have learned in class.

Furthermore, I wonder what skills are these online exercises meant to teach and improve? These extremely simple exercises are essentially divided into vocabulary, grammar and listening comprehension exercises, but I believe it is fair to question whether they can efficiently fulfill this goal. Surely multiple choice and connect the right word to a correct translation type of exercises are not proven to be so efficient that there should not be other types of exercises. This type of exercise also leaves out the possibility of more than one correct answer. If the student thought of an answer that is not listed in the options but would have been equally correct, the exercise gives the student a wrong impression of how the English language works.

Both series were similarly divided into larger units or themes that dealt with the theme set in the national core curriculum for each course. Each book also had additional content like grammar exercises. SanomaPro included a *Final exam focus* part in their course book for course 7. I wonder why SanomaPro decided to put the *final exam focus* unit at the end of *On Track* 7, a book for an optional course, rather than at the end of *On Track* 6, for example, which is the book for the last mandatory English class in the Finnish upper secondary school.

Both publishers offer their digital textbooks as 6- or 48-month licenses as well as a package containing the printed textbook and a 6-month license. I wonder why a student would choose to pick the package over the digital license or the printed book. One reason could be that they

have siblings who use the same book, another reason would be that they prefer reading from a printed book but need the online material for added exercises and audio materials. Then again, if the student uses Otava's books, they do not need access to the paid e-study materials to listen to the audio materials. SanomaPro's case is similar, however the student would have to access the desired materials through the *Arttu* app. All the books within a series cost an equal amount and the same goes for the digital licenses. There is a slight difference in price between the two series as SanomaPro's products are some euros cheaper than Otava's products. Then again, in Finland the teachers choose which books they want to use so the students cannot consider the products' price when buying their course materials, unless buying used printed books. In the table below you can see the prices for each product of both series.

In section 4.4. I talked about the two series in terms of their pedagogic usefulness. There were not many differences between the series, but Otava's *Insights* is slightly better when considering their series' more varied online extra materials. When comparing printed textbooks to e-study materials, I would have to say that the digital versions make for a more useful product. With the printed books the user needs a mobile device or a computer anyway to access audio materials, the digital books are faster and more convenient to use thanks to their search functions, and with the digital books the user has all of their materials in one place.

Assuming that teachers do not require the students to buy one version of the book over the other, and if the students do not prefer one version over the other, based on this analysis I would say that it is more beneficial to get the digital version of the book. If the student is an advanced learner and they do not need the extra exercises or audio materials, the digital books are a better option purely based on their price. If the student needs extra help for their English studies, I feel that the exercises are good independent practice for students who might not get enough work done at school. However, the printed books can be used by multiple students. If a family has more than one child in upper secondary school, they could use the same printed book which is cheaper than buying everyone the digital license.

6. Conclusion

After the matriculation exams were made electronic in Finnish upper secondary schools, digital textbooks have become a common option for printed textbooks. The principal aim of this thesis was to find out how the digital textbooks differ from the more traditional printed textbooks and to compare two publishers' materials to one another. The present study demonstrates that while e-study materials include more features than printed textbooks, students with printed books can also access at least some of the supplemental materials through mobile applications or through a publisher's website. Both publishers' e-study materials were equipped with very similar features, such as a search function, digital notebook and the ability to check the correct answers whenever the user wants. The largest difference between the two series is in their additional exercises included in the digital books. The extra exercises in SanomaPro's *On track* series were all individual silent work exercises for the students to do at home. Some of Otava's extra exercises were made with the classroom in mind as they are more geared towards the teacher. Instead of being completely individual silent work, Otava's extra exercises include role play, pronunciation and listening exercises as well as writing and discussion activities.

The data of this thesis consists of all English textbooks from two large publishers including their books for the six mandatory upper secondary school English course as well as the books for the national optional courses. The total amount of books analyzed was 16 printed textbooks and each printed book's digital counterpart. The amount of data proved to be quite time consuming to analyze, but I did not want to leave anything out or delimit my data to just one or two aspects of the materials to ensure that I do not miss anything. After the analysis it is evident that if I had only analyzed the exercises, the results would not have been very different. Another challenge for my thesis is the inclusion of several fields of study into one thesis and also the fact that very little similar research exists in Finland. The research done on Finnish textbooks is largely done by university students for their MA theses, but that research tends to focus more on issues like gender and minority representation as well as different task types in the books.

It is worth mentioning that SanomaPro's e-study materials were all in their final finished state, but Otava's e-study materials for courses five to eight will be redesigned in the spring of 2020. The difference between Otava's courses one to four and five to eight are only visual, so

the differences in the courses should not influence the results of this analysis. All of the materials analyzed were made for the core curriculum currently in use. The next national core curriculum will be brought into use in 2021, so I would imagine both publishers will introduce new textbook series and e-study materials for the new core curriculum. I believe that every time new textbooks are introduced, they should be studied so the teachers who choose which series to pick are able to make informed decisions. I would like to point out that this analysis has only focused on the materials provided by the publishers, however, the teachers are not limited to using only these materials and they can choose to include whatever materials they find or create themselves. In the future, research could focus more on how to make e-study materials that better benefit students and support the goals of the national core curriculum. As of now, neither series really did anything innovative with the new medium and the digital textbook is just that, the same book but on a computer screen.

The data analyzed is not publicly available, i.e. a paid license is required to view the data and will probably change when the next core curriculum is taken into use. However, I tried to ensure that both series were analyzed fairly. I am not associated with either publisher nor am I inclined to present the results of this analysis in favor of either series.

This thesis has mainly focused on the existing differences between the two most popular English textbook series instead of trying to come up with guidelines for making e-study materials. Further research is required to find out how the existing materials could be improved so that they best support the users' needs and the goals set in the national core curriculum. Future research in this topic could also include interviews with textbook authors about the production and planning of the online materials. Teachers could be interviewed about choosing and the use of these materials. I hope that this study, as one of the first of its kind, can work as a first step towards more research about the production and use of e-study materials.

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